

Brendan M Fisher

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Brendan Fisher is a member of the Tropospheric Composition Group in the Earth Science Section at the Jet Propulsion Laboratory. He is member of the OCO-2 science and validation teams, is the TES instrument scientist, and is part of the OCO-3 team. As part of the OCO-2 project, he is intimately involved in the atmospheric retrieval of XCO₂ algorithm and validation of the product. As the TES instrument scientist, Brendan provides the interface between the science, algorithm and operations teams and provides extensive knowledge of the hardware, on-orbit operations and how these interact with the calibration and product generation for the project. Brendan has extensive experience with flight projects from early build to on-orbit operations, instrument calibration and validation, remote sensing, and atmospheric retrieval algorithms.

Research Interests

- Planetary Atmospheres: thermal structure, dynamics, composition of the earth and gas giants.
- Remote sensing
- Infrared instrumentation for ground and spacecraft application: design, development and use.
- Data science: algorithm and numerical methods, particularly atmospheric sounding, data visualization, user interfaces, hardware control.

Professional Experience

- Jet Propulsion Laboratory (1996 - Present)
 - TES Instrument Scientist (2016-present)
 - OCO-2 Science and Validation Teams (2009-present)
 - Orbiting Carbon Observatory (OCO) Calibration, Validation, and Science Teams (2006-2009)
 - Tropospheric Emission Spectrometer (TES) project (2000 - Present)
 - Mars 98 Orbiter and Mars Polar Lander (1999-2000)
 - Caltech Postdoctoral Scholar (1998 - 1999)
 - NASA/NRC Resident Research Associate (1996 - 1998)
- University of Rochester, Instructor/Fellow (1995 - 1996)

Awards

- NASA Honors Award as a member of the OCO-2 validation team (2016)
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- NASA Honors Award as a member of the OCO-2 L2 algorithm team (2016)
- JPL Team Bonus Award as a member of the TES instrument recovery team (2016)
- JPL Team Bonus Award as a member of the OCO-2 L2 algorithm development team (2016)
- JPL Discovery Award relating to OCO-2 L2 algorithms (2016)
- JPL Team Bonus Award as a member of the OCO-2 project (2015)
- NASA Honors Award as a member of the TES team (2014)
- JPL Team Bonus Award as a member of the OCO-2 project (2014)
- NASA Honors Award as a member of the Aura Project (2005)
- NASA Honors Award as a member of the Aura Tropospheric Emission Spectrometer instrument and ground data system development teams (2005)
- Goddard Space Flight Center Group Achievement Award as a member of the Aura Team (2005) • Fellow, National Research Council Research Associates Program (1996 - 1998)
- Fellow, National Aeronautics and Space Administration Graduate Student Researchers Program, Office of Space Science, NASA Headquarters (1991 - 1994)
- Fellow, National Aeronautics and Space Administration Space Grant Program, California Space Institute, Scripps Institute of Oceanography (1990)
- Studentship Award, American Astronomical Society, Solar Physics Division (1990)
- 1st Place, Senior Physics Lab Project, University of California, San Diego (1986)

Publications:

Fisher, B.M., Orton, G.S, Liu, J., Schneider, T., Ressler, M.E, Hoffman, W.F.: The organization of Jupiter's upper tropospheric temperature structure and its evolution, 1996–1997. Icarus, 280, 268-277, 2016. <http://doi.org/10.1016/j.icarus.2016.07.016>,

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Taylor, T.E., O'Dell, C.W., Frankenberg, C., Partain, P.T., Cronk, H.Q., Savtchenko, A., Nelson, R.R., Rosenthal, E.J., Chang, A.Y., **Fisher**, B., Osterman, G.O., Pollock, R.H., Crisp, D., Eldering, A., Gunson, M.R.: Orbiting Carbon Observatory-2 (OCO-2) cloud screening algorithms: validation against collocated MODIS and CALIOP data. Atmos. Meas. Tech., 9, 973-989, 2016, <http://www.atmos-meas-tech.net/9/973/2016/>, doi:10.5194/amt-9-973-2016

H. Nguyen, G. Osterman, D. Wunch, C. O'Dell, L. Mandrake, P. Wennberg, B. **Fisher**, and R. Castano: A method for colocating satellite XCO₂ data to ground-based data and its application to ACOS-GOSAT and TCCON. Atmos. Meas. Tech., 7, 2631-2644, doi:10.5194/amt-7-2631-2014, 2014

H. Lindqvist, C. W. O'Dell, S. Basu, H. Boesch, F. Chevallier, N. Deutscher, L. Feng, B. **Fisher**, F. Hase, M. Inoue, R. Kivi, I. Morino, P. I. Palmer, R. Parker, M. Schneider, R. Sussmann, and Y. Yoshida: Does GOSAT capture the true seasonal cycle of carbon dioxide? *Atmos. Chem. Phys.*, 15, 13023-13040, doi:10.5194/acp-15-13023-2015, 2015

D. Wunch, P. O. Wennberg, G. C. Toon, B. J. Connor, B. **Fisher**, G. B. Osterman, C. Frankenberg, L. Mandrake, C. O'Dell, P. Ahonen, S. C. Biraud, R. Castano, N. Cressie, D. Crisp, N. M. Deutscher, A. Eldering, M. L. Fisher, D. W. T. Griffith, M. Gunson, P. Heikkinen, G. Keppel-Aleks, E. Kyrö, R. Lindenmaier, R. Macatangay, J. Mendonca, J. Messerschmidt, C. E. Miller, I. Morino, J. Notholt, F. A. Oyafuso, M. Rettinger, J. Robinson, C. M. Roehl, R. J. Salawitch, V. Sherlock, K. Strong, R. Sussmann, T. Tanaka, D. R. Thompson, O. Uchino, T. Warneke, and S. C. Wofsy: A method for evaluating bias in global measurements of CO₂ total columns from space. *Atmos. Chem. Phys.*, 11, 12317-12337, doi:10.5194/acp-11-12317-2011, 2011

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G. S. Orton, **B. M. Fisher**, S. T. Stewart, A. J. Friedson, J. L. Ortiz, M. Marinova, W. Hoffmann, J. Hora, M. Ressler, S. Hinkley, V. Krishnan, M. Masanovic, J. Tesic., A. Tziolas, and K. Parija. 1998. The Galileo Probe entry site: Characteristics of the Galileo Probe entry site from earth-based remote sensing observations. *J. Geophys. Res.*, **103**, 22791-22,814.

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